Cementitious Materials for Waste Treatment, Disposal, Remediation and Decommissioning Workshop. December 11-14, 2006

Savannah River National Laboratory

Decommissioning Project Remnant Considerations

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Outline

- Background
- Project Drivers
- Endpoints
- Risks
- Needs

D&D Scope

- Scope
  - Deactivation and Decommissioning (D&D) of contaminated facilities, both nuclear and chemical.
  - Over 1000 facilities have been slated for decommissioning including:
    - Five reactors
    - Four canyons
- Over 270 facilities have been completed to date.

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D&D Schedule

- Project is scheduled for completion in 2025, at which time Environmental Management will have completed its mission at SRS.
  - Completion date has potential to change based on any number of factors
- Key, near-term completions scheduled
  - P-Reactor 2013
  - R-Reactor 2014
  - F-Canyon 2015 (pending Global Nuclear Energy Partnership decision by 2011)

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Project Drivers

- Operational mission completes
- Federal Facility Agreement
  - Complete facility D&D to support Area Closures schedules
- Risk reduction
- Operational footprint reduction

Endpoints

- For simple, less contaminated facilities
  - endpoint = concrete pad
- For large hardened facilities such as Reactors and Canyons need to define end point
  - Complete dismantlement
  - In-situ endpoint

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Endpoint example: M-Area Slabs


Large Hardened Facility
SGCP-2006-071-8

Endpoints

- How do cementitious materials influence the end point?
  - Concrete pads and structures may contain some contamination
  - Concrete remnants can provide benefit by isolating contaminants from the environment
  - Placing concrete/grout can
    - provide structural stability
    - reduce contaminant mobility
    - provide contaminant isolation

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Risk Considerations

- Need to consider remnant impacts
  - Industrial worker exposure scenario
  - Groundwater impacts
- Contaminant removal/isolation is typically required to reduce risk levels of remnants
  - Sampling
  - Scabbling slabs
  - Pouring concrete caps

Opportunities / Needs

- Understanding of concrete contamination and mobility as well as weathering can provide a solid basis for in-situ closure and slab end point decisions
- Structural stability assessment of large hardened facilities – how long can we expect them to remain intact?
- Consensus